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Membracidae (Homoptera) from British Guiana.¹

W. D. FUNKHOUSER

University of Kentucky.

[This is one of a series of papers dealing with the collections made at Kartabo, British Guiana, at the Field Station of the Department of Tropical Research of the New York Zoological Society, under the direction of Dr. William Beebe. During the eight years of the maintenance of the station, extensive collections and ecological studies were made within an area of jungle one-quarter of a mile square, which may be called the Guiana Jungle-zone. For details concerning this area of intensive study, see *Zoologica*, Vol. VI, No. 1, 1925.

Miss Maud D. Haviland reported on the first collection of Membracidae from Kartabo in *Zoologica*, Vol. VI, No. 3, 1925. The present paper is the result of Dr. W. D. Funkhouser's study of a second collection.]

INTRODUCTION.

Through the courtesy of Dr. William Beebe, the writer has had the privilege of examining a very interesting lot of Membracidae collected chiefly in British Guiana. In fact, Dr. Beebe states that practically all of the specimens were taken within a quarter of a square mile of jungle at Kartabo. This small area must certainly have a rich insect fauna since it has yielded nearly fifty different species of one small family.

The collection is particularly valuable, however, in its contribution to our knowledge of the geographical distribution of the Membracidae since a very large number of the listed species represent new locality records. Included in the collection are two species taken at Guanoco, Venezuela, and one in Trinidad.

The species represented in the collection are here reported as follows:

1. *Membracis fusca* DeGeer.

DeGeer, *Ins.*, Vol. III: p. 208, No. 10, Tab. 32, fig. 14. (1773).

Eight specimens from Kartabo and six from Bartica. A large foliaceous bizarre form, originally described from Peru but is

common throughout South America. It has been previously reported from Kartabo by Miss Maud Haviland (Mrs. H. H. Brindley) in 1925.

2. *Membracis foliata* Linn. var. *c-album* Fairm.

Linnaeus, *Syst. Nat.*, Vol. II: p. 705, No. 2. (1767).

Fairmaire, *Revue Memb.*, p. 244, No. 4. (1846).

Ten specimens from Kartabo. Another of the well known foliaceous forms with a wide distribution in South and Central America, its known range extending from Brazil across the northern part of South America and through Central America to Mexico. Fairmaire described the variety *c-album* from British Guiana.

3. *Membracis provittata* Buckt.

Buckton, *Mon. Memb.*, p. 42, Pl. 3, figs. 6, 6a. (1903).

Twenty-two specimens from Kartabo and one from Bartica. This species has been considered a synonym of *tectigera* but is now known to be distinct. Buckton described it from Surinam and we have a long series in our collection from British Guiana. These are the only known localities, for the species is apparently rare and is seldom seen in collections.

4. *Membracis fasciata* Fabr.

Fabricius, *Syst. Ent.*, Vol. II: p. 2092, No. 54. (1767).

One specimen from Kartabo. A striking species very common in Brazil and with a rather confused taxonomic history since it has been redescribed under a large number of synonyms. Miss Haviland reported it from British Guiana in 1925.

5. *Membracis arcuata* DeGeer.

DeGeer, *Ins.*, Vol. III: p. 206, No. 9, Tab. 32, fig. 10. (1773).

One specimen from Kartabo. Common throughout South and Central America and previously reported from British Guiana by Miss Haviland.

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6. *Enchenopa lanceolata* Stoll.

Stoll, Cic., Tab. 27, fig. 166. (1780).

Four specimens from Kartabo and ten from Bartica. One of the commonest of the neotropical membracids. Reported from all of the northern countries of South America and across Panama into Central America. Previously reported from British Guiana by Miss Haviland.

7. *Enchenopa serratipes* Buckt.

Buckton, Mon. Memb., p. 49, Pl. 5, fig. 9. (1903).

Two specimens from Kartabo. This species has often been confused with *E. albidorsa* Fairm., but is distinct. *E. albidorsa* is abundant throughout South America but we have undoubted records of *serratipes* only from Brazil, British Guiana and Colombia. Miss Haviland reported this species as *albidorsa* from Kartabo.

8. *Campylenchia hastata* Fabr.

Fabricius, Mant. Ins., Vol. II: p. 263, No. 9. (1787).

Two specimens from Kartabo. A widely distributed species, showing some variation in size and color in different regions but found in one phase or another in most parts of South America, Central America and Mexico. One of the common forms of this species was described as *nutans* and was so reported from British Guiana by Miss Haviland.

9. *Leioscyta rufidorsa* Godg.

Goding, Journ. N. Y. Ent. Soc., Vol. XXXVI: p. 37. (1928).

Two species from Kartabo. Goding described this species from Ecuador and it has not been reported in the literature from any other country but we have specimens in our collection from Peru, Colombia and Brazil. This is the first record from British Guiana.

10. *Erechtia punctipes* Buckt.

Buckton, Mon. Memb., p. 53, Pl. 7, figs. 5-5b. (1903).

One specimen from Kartabo. This is apparently a very rare insect and is seldom seen in collections. Buckton gave only "South America" as the locality and it was a long time before it was finally recognized. Finally Goding identified it from Brazil and the writer secured a good series from Peru. This British Guiana specimen gives us a new locality record.

11. *Erechtia brunneidorsata* Funkh.

Funkhouser, Can. Ent., Vol. XLVI: p. 357, Pl. 24, fig. 1. (1914).

Three specimens from Kartabo; one from Bartica. Previously known only from Peru but the British Guiana specimens agree entirely with the type material. A new locality record.

12. *Pterygia uropigii* Buckt.

Buckton, Mon. Memb., p. 72, Pl. 12, fig. 3. (1903).

One specimen from Kartabo. A bizarre form described from Brazil and reported from British Guiana by Miss Haviland in 1925. The writer has a few specimens from Peru. These are the only locality records known.

13. *Pterygia cerviceps* Fowl.

Fowler, B. C. A., p. 24, No. 3, Tab. 2, figs. 12, 12a. (1894).

Two specimens from Kartabo. The center of distribution of this species is certainly Central America where it is quite common but we have seen specimens from Colombia and from Venezuela so it apparently ranges down into South America. This is the first record from British Guiana.

14. *Umbonia spinosa* Fabr.

Fabricius, Syst. Ent., p. 675, No. 4. (1775).

Eighteen specimens from Kartabo. One of the largest, commonest, most widely distributed and most easily recognized of the neotropical Membracidae. Reported from almost every country in South America and Central America. Previously reported from Kartabo by Miss Haviland.

15. *Aconophora marginata* Walk.

Walker, List. Hom. B. M., p. 540, No. 16. (1851).

Eleven specimens from Kartabo. This species is common in Mexico and Central America and has been reported from Panama, Brazil, Ecuador, Peru and Bolivia but this is the first record from British Guiana.

16. *Aconophora pallescens* Stal.

Stal, Hem. Fabr., Vol. II: p. 35, No. 12. (1869).

Two specimens from Kartabo. Another widely distributed species, closely related to the preceding, and reported from the same general regions but never before recorded from British Guiana.

17. *Aconophora fusiformis* Fowl.

Fowler, B. C. A., p. 69, No. 19, Tab. 5, figs. 18, 18a, 19. (1895).

One specimen from Kartabo. This is another Central American form which is only rarely reported from South America. The writer has material from Brazil and Bolivia but the Kartabo specimen gives us the first record from British Guiana.

18. *Aconophora projecta* Funkh.

Funkhouser, Journ. N. Y. Ent. Soc., Vol. XXV: No. 2, p. 160. (1927).

One specimen from Kartabo. Since this species has been recorded from Ecuador, Bolivia, Colombia and Brazil, it would be expected to occur in British Guiana but has

not been previously reported from that country. Another new locality record.

19. *Darnis partita* Walk.

Walker, *Ins. Saund.*, p. 75. (1858).

Five specimens from Kartabo and one from Bartica. When Miss Haviland reported this species from Kartabo in 1925 it was the first record from South America but since then we have secured specimens from Peru, Ecuador, Panama, Canal Zone and Colombia. It would therefore seem that its range extends along the northern coast of South America.

20. *Darnis latior* Fowl.

Fowler, B. C. A., p. 52, No. 2, Tab. 4, figs. 16, 16a. (1894).

One specimen from Kartabo. This is another new locality record but the species has been found in Peru, Ecuador and Colombia so its distribution is probably about the same as that of *partita*.

21. *Stictopelta fraterna* Butler.

Butler, *Cist. Ent.*, Vol. II: p. 340, No. 9. (1878).

One specimen from Kartabo and one from West Bank. Again a new locality record. It was described from Peru and both Goding and Fowler reported it from Mexico. We have specimens in our collection from Colombia and Bolivia. These localities with this British Guiana record represent its present known distribution.

22. *Nassunia binotata* Fairm.

Fairmaire, *Revue Memb.*, p. 291, No. 3. (1846).

Three specimens from Kartabo. A very rare species, almost never seen in collections and previously known only from Brazil. A new locality record.

23. *Heteronotus tridens* Burm.

Burmeister, *Rev. Silb.*, Vol. I: p. 229. (1833).

Seven specimens from Kartabo. The largest species of its genus, very grotesque in appearance, strikingly marked and very well known. Common in northern South America but this is the first time it has been reported from British Guiana. Another new locality record.

24. *Heteronotus spinosus* Lap.

Laporte, *Ann. Soc. Ent. France*, Vol. I: p. 96, Pl. 3, fig. 7. (1832).

Four specimens from Kartabo. Closely related to the preceding and showing considerable variation so that it has been described under several synonyms. Its distribution seems to be about the same as that of *H. tridens* of which it may be merely a variety. Miss Haviland reported it from British Guiana under the name *Heniconotus armatus*.

25. *Cymbomorpha dorsata* Fairm.

Fairmaire, *Rev. Memb.*, p. 293, No. 6. (1846).

One specimen from Kartabo and one from Guanoco, Venezuela. Both the British Guiana and the Venezuela records are new. It has previously been reported only from Brazil, Peru and Costa Rica.

26. *Horiola picta* Coq.

Coquebert, *Ill. Ic.*, p. 78, Tab. 18, fig. 10. (1801).

One specimen from Trinidad. The commonest species of its genus, found in most parts of South America, Central America and the West Indies but not previously recorded in the literature from Trinidad so that this also is a new locality record.

27. *Horiola lineolata* Fairm.

Fairmaire, *Rev. Memb.*, p. 492, No. 2. (1846).

Three specimens from Kartabo. Closely related to the preceding species and with about the same range. It is commonly found in Brazil and Colombia but has not been previously reported from British Guiana.

28. *Ceresa sallai* Stal.

Stal, *Hem. Mex.*, p. 70, No. 421. (1864).

A good series of thirty-one specimens from Kartabo. This species was described from Mexico where it is abundant and it is common in Central America. It is reported only rarely from South America, the only known records being from Brazil and Bolivia. This is the first record from British Guiana.

29. *Ceresa vitulus minor* Fowl.

Fowler, B. C. A., p. 103. (1894).

Five specimens from Kartabo. This is the small variety of *C. vitulus* Fabr. which seems to occur with *vitulus* wherever *vitulus* is found. *C. vitulus* was reported from British Guiana by Miss Haviland but this is the first record of the variety from that country. It is found throughout South America.

30. *Micrutalis pallens* Fowl.

Fowler, B. C. A., p. 118, No. 4. (1895).

One specimen from Kartabo. This is a common species in Mexico and Central America but has not been reported in the literature of the family from South America. However we have two specimens in our collection from Venezuela so it is not surprising to see it from British Guiana. This is a new record from British Guiana and the first published record from South America.

31. *Boethoos reticulata* Fabr.

Fabricius, *Syst. Rhyng.*, p. 29. (1803).

Two specimens from Kartabo. Apparently abundant in Brazil, Colombia and Venezuela and previously reported from British Guiana by Miss Haviland.

32. *Vanduzeeia triguttata* Burm.

Burmeister, *Rev. Silb.*, Vol. IV: p. 183, No. 4. (1836).

Two specimens from Kartabo. The dominant species of its genus in southwestern United States, Mexico and Central America. The South American forms which are found in Colombia and Venezuela are slightly different in minor respects from the northern ones but we believe that they are all of the same species. This is the first record from British Guiana.

33. *Stylocentrus ancora* Perty.

Perty, *Del. Anim.*, p. 179, Pl. 35, fig. 15. (1834).

One specimen from Kartabo. Very abundant in Brazil and recorded from Ecuador, Colombia and Venezuela. This is the first record from British Guiana.

34. *Cyphonia clavata* Fabr.

Fabricius, *Mant. Ins.*, Vol. II: p. 264, No. 17. (1878).

Eight specimens from Kartabo and one from West Bank. One of the commonest membracids in South America and found in all of the northern and central areas of that continent. Reported from British Guiana by Miss Haviland in 1925.

35. *Cyphonia proxima* Guer.

Guerin, *ic. Reg. Anim. Ins.*, p. 365, Tab. 59, fig. 3. (1838).

Two specimens from Kartabo. A less abundant species than the preceding but with a range extending from Mexico through Central America and Panama to northern South America. This, however, is the first record from British Guiana.

36. *Antianthe expansa* Germ.

Germar, *Rev. Silb.*, Vol. III: p. 245, No. 1. (1835).

Three specimens from Guanoco, Venezuela. One of the best known and most widely distributed of the American Membracidae. It has been reported from practically every country in South and Central America and extends northward into Florida, California and Arizona.

37. *Amastris antica* Germ.

Germar, *Mag. Ent.*, Vol. IV: p. 16. (1821).

Two specimens from Kartabo. A very rare species previously known only from Brazil and Peru. It is quite distinct from all other species of the genus and is easily recognized. A new locality record.

38. *Amastris obtogens* Fabr.

Fabricius, *Syst. Rhyng.*, Vol. II: p. 25. (1803).

Seven specimens from Kartabo. The best known and probably the most abundant of the species of the genus but not previously

reported from British Guiana. The specimens most often seen in collections are from Brazil, Colombia, Ecuador and Peru. A new locality record.

39. *Amastris compacta* Walk.

Walker, *List Hom. B. M. Suppl.*, p. 140. (1858).

Two specimens on one pin from Kartabo. A well known and rather widely distributed species, fairly common in Brazil, Peru, Ecuador and Colombia but this is the first record from British Guiana.

40. *Amastris minuta* Funkh.

Funkhouser, *Journ. N. Y. Ent. Soc.*, Vol. XXX: No. 1, p. 30, fig. 6. (1922).

One specimen from Kartabo. This species has never been mentioned in the literature of the family since its original description and so far as we know this is the second specimen ever to be found since the type was a single specimen from Peru. Of course this is a new locality record.

41. *Hille exaltata* Walk.

Walker, *List Hom. B. M. Suppl.*, p. 140. (1858).

Two specimens from Kartabo. This species has been reported in the literature only from Brazil but we have specimens in our collection from Peru and Colombia. This is the first record from British Guiana.

42. *Hille herbicola* Hav.

Haviland, *Zoologica*, Vol. VI: No. 3, p. 255, Pl. 4, figs. 1, 1a. (1925).

Three specimens from Kartabo. This species was described from Kartabo and has never been reported from any other locality.

43. *Tynelia hirsuta* Funkh.

Funkhouser, *Journ. N. Y. Ent. Soc.*, Vol. XXX: No. 1, p. 25, Pl. 3, fig. 1. (1922).

One specimen from Kartabo. Described from Peru and we have seen material from Nicaragua. This is the first record from British Guiana.

44. *Rhexia pallescens* Fabr.

Fabricius, *Syst. Rhyng.*, Vol. II: p. 28, No. 8. (1803).

One specimen from Kartabo. A species which has been described under a number of different specific names in at least five different genera. It is quite common throughout northern South America and shows considerable variation in color. It seems to be most abundant in Brazil, Surinam, Colombia and Ecuador. This is a new record from British Guiana.

45. *Stegaspis insignis* Buckt.

Buckton, *Mon. Memb.*, p. 59, figs. 6, 6a. (1903).

Three specimens from Kartabo. One of the peculiar "dried leaf" forms which al-

ways attract attention and are often seen in collections. Most of the material which we have seen has been from Brazil, Peru, Ecuador and Colombia. This is the first record for British Guiana.

46. *Stegaspis laevipennis* Fairm.

Fairmaire, *Rev. Memb.*, p. 527, No. 14. (1846).

Four specimens from Kartabo. Another of the brown, foliaceous species of this genus with about the same distribution as the preceding. It was reported from British Guiana by Miss Haviland in 1925.

47. *Lycoderes hippocampus* Fabr.

Fabricius, *Syst. Rhyng.*, p. 20, No. 22. (1803).

One specimen from Kartabo. Apparently a very rare species. It was reported from British Guiana in 1925 by Miss Haviland but was known previously only from Brazil

and has never been recorded from any other countries.

48. *Bocydium globulare* Fabr.

Fabricius, *Syst. Rhyng.*, p. 16, No. 3. (1803).

Two specimens from Kartabo. A species often figured to illustrate a most bizarre type of pronotal development, especially because of the globules on the bar above the head. However it is not common. It was described from Brazil and we have specimens from Peru. It has not been previously recorded from British Guiana.

49. *Tolania opponens* Walk.

Walker, *List Hom. B. M. Suppl.*, p. 159. (1858).

Three specimens from Guanoco, Venezuela. One of the few membracids which completely lack a posterior process. Very abundant throughout South America, Central America and Mexico.